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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,399	01/25/2002	Mario Merlin	2-2817	1606

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EXAMINER

MITCHELL, JAMES M

ART UNIT PAPER NUMBER

2827

DATE MAILED: 02/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/057,399

Applicant(s)

MERLIN ET AL.

Examiner

James Mitchell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-7,10 and 12-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,5-7,10 and 12 is/are allowed.
- 6) ☒ Claim(s) 13-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because of use of black shading in Figure 5 and in Figures 2 and 3 the drawings extend too close to the top of the pages. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 13-17, 19-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wislocky as applied to claim 13, and further view of Koichi (JP 55-050659).

4. Wislocky (Fig 1, 3) discloses a compression assembled semiconductor package comprising a semiconductor die inherent in a wafer (36) having a first major surface (top) and a second major surface (bottom), with a control electrode (metal on the top and bottom surface; not labeled) disposed on a first major surface (Column 3, Line 41)

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of said die, and a first and second electrode disposed on a first and second major surface (via metal formed on top and bottom surface; Column 1, Lines 66-68), a molded plastic insulation ring (33; Column 2, Lines 48-49) annularly disposed around said die, a control signal carrier (37 and 38; via terminal connected to the control lead) extending through said insulation ring from the exterior thereof and electrically connected to said control electrode (Column 5, Lines 7-9), a first pole (11) being surface to surface electrical contact with said first electrode (Column 4, Lines 3-7) with said first pole includes an annular rib (portion of 29 closest to pole) and an annular flange (portion of 29 farthest from pole) which is at least partially embedded in said ring and a circular connector (middle portion of 29), said second pole includes an annular rib (portion of 29 closest to pole) and an annular flange (portion of 29 farthest form pole) which is at least partially embedded in said ring and circular connector (middle portion of 29), wherein the first pole includes a groove (13; via pedestal) to allow said control carrier to reach said control electrode, a connection tab (39) extending radially from the pole through the ring and forming an external terminal ("Gate" Column 3, Lines 50-54), the control carrier further comprises an L- shaped slender rod that is a small insert (Column 3, Line 48) with said terminal tube (37; inherently a carrier), as such the rod is a bond wire (via a wire that is bonded) and a tab, wherein a portion of the tab is a control lead (37) that extends through the molded plastic insulation ring, said tab having a head (portion in contact with electrode) in electrical contact with said control electrode.

5. In regards to the circular connector connecting said annular rib and said annular flange, the prior art discloses the claimed invention except for the circular connector,

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annular rib and said annular flange being separate components. It would have been obvious to one of ordinary skill in the art at the time the invention was made to connect the annular rib, flange and circular connector by separate parts, because it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177,179 (BdPAtApp& Int 1969).

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wislocky as applied to claim 13 in further combination with Kouchi (JP55-050659).

7. Wislocky does not explicitly disclose a thyristor or a pin in electrical contact one end of thereof with said control electrode and electrically connected by a conductive strip to a lead that extends through the body of said ring.

8. However, Koichi utilizes a thyristor held in place by a first (7) and second pole (8) surrounded by a ring (9) with a pin (15, "screw") attached to an electrode (4) and electrically connected by a conductive strip (14) to a lead (12) that extends through the body of the ring (9).

9. It would have been obvious to one of ordinary skill in the art to form the semiconductor of Wislocky as a thyristor in order to provide for an alternate device for which the housing could be used for as taught by Wislocky (Column 1, Lines 5-11).

10. Further, it would have been obvious to one of ordinary skill in the art to incorporate a pin that is electrically connected by a strip to a lead to be attached to the electrode, in order to avoid variations of gate signal in the thyristor as taught by Koichi.

11. Claims 13-25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koichi (JP 55-050659).

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12. Koichi (Fig 3a-c) discloses a compression assembled thyristor semiconductor package comprising a semiconductor die inherent in a wafer (1) having a first major surface (top) and a second major surface (bottom), with a control electrode (4) disposed on a first major surface of said die, and a first (3) and second electrode (2) disposed on a first and second major surface, a molded plastic insulation ring (9) annularly disposed around said die, an annular flange (10a) connected to said insulation ring at an end thereof, a first pole (7) being surface to surface electrical contact with said first electrode with said first pole includes an annular rib (portion of 10b closest to pole) extending from a surface, said first pole unitarily including an annular rib and said annular flanges, thereby connecting said first pole to said flange, and a second pole being in surface to surface electrical contact with said second electrode and supported by an insulation ring, whereby the semiconductor is held between the first and second pole and a circular connector (middle portion of 10b) connecting said annular rib and said annular flange.

13. In regards to the circular connector connecting said annular rib and said annular flange, see paragraph 5.

Response to Arguments

14. Applicant's arguments with respect to claims 13-25 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

15. Claims 1, 2, 5, 6, 7, 10 and 12 are allowable. The following is an examiner's statement of reasons for allowance: the prior art does not disclose or make obvious a

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compression assembled semiconductor package comprising a pole with a unitary body with a rim being ultrasonically bonded directly to an end of a molded plastic insulation ring including all the limitations set forth in the independent claims.


Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Mitchell whose telephone number is (703) 305-0244. The examiner can normally be reached on M-F 10:30-8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (703) 305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3230 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Jmm
February 5, 2003


DAVID E. GRAYBILL
PRIMARY EXAMINER